Air Quality Permitting
Statement of Basis

December 7, 2004

Tier I Operating Permit No. T1-020203

Bennett Lumber Products, Inc., Princeton

Facility ID No. 057-00008

Prepared by:

Dustin Holloway, Permitting Analyst
Air Quality Division

FINAL

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Acronyms, Units, And Chemical Nomenclature

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EPA	U.S. Environmental Protection Agency
gr	grain (1 lb = 7,000 grains)
HAPs	hazardous air pollutants
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
km	kilometer
MACT	Maximum Achievable Control Technology
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_X	nitrogen oxides
NSPS	New Source Performance Standards
PM	Particulate matter
PM_{10}	Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTC	permit to construct
SIC	Standard Industrial Classification
SO_2	sulfur dioxide
T/yr	tons per year
VOC	volatile organic compound

PUBLIC COMMENT / AFFECTED STATES / EPA REVIEW SUMMARY

A 30-day public comment period for the Bennett Lumber Products, Inc. draft Tier I operating permit was held in accordance with IDAPA 58.01.01.364, *Rules for the Control of Air Pollution in Idaho*, from June 24, 2004 to July 26, 2004.

IDAPA 58.01.01.008.01 defines *affected states* as: *"All states: whose air quality may be affected by the emissions of the Tier I source and that are contiguous to Idaho; or that are within 50 miles of the Tier I source."*

A review of the site location information included in the permit application indicates that the facility is located within 50 miles of a state border. Therefore, the state of Washington was provided an opportunity to comment on the draft Tier I operating permit.

The permit was provided for EPA's 45-day review on October 19, 2004.

No comments were received on the proposed permit from the public or EPA.

1. PURPOSE

The purpose of this memorandum is to explain the legal and factual basis for this draft Tier I operating permit in accordance with IDAPA 58.01.01.362.

DEQ has reviewed the information provided by Bennett Lumber Products, Inc. (Bennett Lumber) regarding the operation of their sawmill located near Princeton. This permit application was required as part of Bennett Lumber's compliance plan in their initial Tier I operating permit.

2. FACILITY DESCRIPTION

Bennett Lumber is a saw and planing mill that manufactures dimensional lumber. The facility is located in Princeton, Idaho. There are two planing mills and one sawmill. The boiler operates continuously except during one week of shutdown for maintenance.

Logs are sorted, debarked, squared, and finally reduced to dimension lumber. Most lumber is dried to a pre-determined moisture level in a series of steam-heated kilns before being sent to the planing mill for surfacing and final finishing.

Most of Bennett Lumber's emissions are from one boiler, six kilns, and woodworking processes controlled by seven cyclones and a baghouse. Bennett Lumber's emissions are mainly particulate matter (PM) and carbon monoxide (CO). The total CO emissions are in excess of 100 tons per year (T/yr), thereby making the facility a major facility as defined in IDAPA 58.01.01.008.10.

Bennett Lumber's production varies, but the operation is capable of producing approximately 102 million board feet of lumber annually. The permit assumes annual rates of 102 million board feet lumber scale and 60 million board feet log scale.

3. FACILITY/AREA CLASSIFICATION

This facility is a major facility as defined by IDAPA 58.01.01.008.10 because the facility has the potential to emit carbon monoxide (CO) in amounts greater than 100 T/yr. This facility is not a designated facility as defined by IDAPA 58.01.01.006.27 and the facility's potential emissions of any single criteria pollutant is less than 250 T/yr. Therefore, this facility is not subject to PSD permitting requirements. This facility is not subject to federal NSPS requirements in accordance with 40 CFR 60 because the boiler was last modified prior to the applicable date in 40 CFR 60.40c. This facility is not subject to federal NESHAP requirements in accordance with 40 CFR 61, or MACT requirements in accordance with 40 CFR 63. The SIC defining the facility is 2421, and AIRS facility classification is A. The facility is located in Latah County, which is located in AQCR No. 62. This area is unclassifiable for all federal and state criteria pollutants. There are no Class I areas within 10 km of the facility.

4. APPLICATION SCOPE

Bennett Lumber was issued an initial Tier I Operating Permit on May 15, 2001 which contains a compliance schedule to bring the facility into compliance with applicable Permit to Construct requirements. The schedule requires Bennett Lumber to submit a Tier I Operating Permit application to incorporate the requirements of their pending Tier II operating permit.

On June 10, 2002, DEQ received the Tier I operating permit modification application from Bennett Lumber for their Princeton facility. On July 10, 2002, DEQ representatives and Bennett Lumber representatives met at the Princeton facility to discuss alterations to the initial Tier I operating permit that was issued on May 15, 2001.

A 30-day public comment period for the Bennett Lumber draft Tier I operating permit was held in accordance with IDAPA 58.01.01.364 from June 24, 2004 to July 26, 2004. No comments were received on the draft permit.

5. BASIS OF THE ANALYSIS

The following documents were relied upon in preparing this memorandum and the Tier I operating permit:

- Tier I operating permit application, received June 10, 2002; Tier II Operating Permit application and supplemental application materials
- Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, January 1995 and subsequent supplements, Office of Air Quality Planning and Standards, EPA
- DEQ emissions factors for the Idaho wood industry
- Guidance developed by the EPA and DEQ

6. REGULATORY ANALYSIS

This section explains the changes that were made to the Tier I operating permit. Permit conditions that were not changed are not addressed in this regulatory analysis. For a description of existing requirements see the original technical analysis dated April 30, 2001.

6.1 Facility-Wide Conditions

Fugitive and Visible Emissions Inspections

The fugitive emissions inspections and visible emissions inspections in Permit Conditions 2.4 and 2.8 were changed from monthly to quarterly. Review of Bennett Lumber's monitoring reports shows that quarterly monitoring is appropriate for this facility because they have had no fugitive emissions problems during the permit term.

Fuel Sulfur Content

The provisions of IDAPA 58.01.01.728 were added to the general provisions because Bennett Lumber has a diesel fuel fired emergency generator on site. The sulfur content of any distillate fuel oil used by Bennett Lumber is limited to 0.3% for ASTM Grade 1 fuel oil and 0.5% for ASTM Grade 2 fuel oil. The permittee is required to keep supplier records of the sulfur content of all fuel oil received on site.

6.2 Hog-Fuel Boiler

Opacity Requirements

The redundant opacity provision was removed from the boiler section of the permit because it is already included in the facility-wide conditions.

Pressure Drop Requirements

The pressure drop requirements for the wet scrubber and multiclone were changed. The permittee is now required to include the normal operating pressure drop ranges into the wet scrubber and multiclone's operations and maintenance (O&M) manual rather than maintain plus or minus 20% of the pressure drop measured during the most recent performance test. The permittee is required to maintain the pressure drops within the O&M manual specifications.

Hog-Fuel Boiler Visible Emissions Inspections

The weekly visible emissions inspections on the boiler were removed from this permit. Quarterly monitoring is consistent with other Title V permits issued to the wood industry in Idaho. In addition, the permittee is required to develop an O&M manual for the wet scrubber and multiclone that contains operation, maintenance, and repair provisions. Specifically, the O&M manual is to include normal operating procedures, methods of identifying and preventing malfunctions, weekly inspections, and appropriate corrective action procedures to correct upsets and malfunctions. These requirements will provide a better method of preventing excessive visible emissions than conducting visible emissions inspections.

Other Requirements

This permit incorporates the requirements of Bennett Lumber's Tier II operating permit, issued December 29, 2004. These requirements include:

- Emissions limits of PM_{10}, CO, and NO_x from the boiler
- The permittee is required to install a device to continuously measure the scrubbing media flow rate
- The permittee is required to incorporate the minimum operating ranges for scrubbing media flow rate into their O&M manual, and monitor and record the scrubbing media flow rate once daily.

See the Tier II operating permit's statement of basis for descriptions of these operating and monitoring requirements.

6.3 Lumber Drying Kilns

Visible Emissions Inspections

The weekly visible emissions inspections on the lumber drying kilns were removed from this permit as they were burdensome and unnecessary.

Process Weight Rate Calculations

The requirement to calculate the process weight rate limits was removed from this permit. This condition is not necessary. The emissions estimates are less than one pound per hour and the process weight is far greater than the values in IDAPA 58.01.01.701 and 702. Therefore, it is not necessary to calculate the process weight limit.

Dry Kiln Throughput and Emissions Limits

This permit incorporates the Tier II operating permit requirements for the lumber drying kilns. This permit includes PM_{10} and VOC emissions limits and annual throughput limits for the kilns. See the Tier II operating permit's statement of basis for descriptions of these requirements.

Performance Testing Requirements

Bennett Lumber conducted a performance test on the boiler on July 31, 2001. The test results were less than 75% of the applicable permitted standard. Therefore, in accordance with the performance testing requirements in the permit, no further testing is required during the life of the Tier I operating permit. This permit renewal includes a new performance test for PM. The test must be conducted on or before July 31, 2006. This permit condition should be included when the Tier I operating permit is renewed.

6.4 *Woodworking Equipment*

Visible Emissions Inspections

The weekly visible emissions inspections on the woodworking equipment were removed from this permit. The permittee is required to develop an O&M manual for the woodworking equipment which contains startup, shutdown, and maintenance procedures, upset conditions guidelines, and corrective action procedures. These requirements will provide a better method of preventing excessive visible emissions than just conducting visible emissions inspections.

Process Weight Rate Calculations

The requirement to monitor the throughput from the cyclones and baghouse and calculate the process weight rate limits was removed from this permit. This condition is not necessary. The emissions estimates are based on an emissions factor of 0.2 pounds per bone dry ton. The allowable emissions rate in IDAPA 58.01.01.701 and 702 is nearly an order of magnitude greater than the estimated emissions from these processes. Therefore, it is not necessary to calculate the process weight limit.

Emissions Limits

This permit includes emissions limits for PM_{10} from certain woodworking processes. These requirements were incorporated from the facility's Tier II operating permit. See the Tier II operating permit's statement of basis for descriptions of these requirements. There are no specific throughput limits for the woodworking equipment. The limit established on the lumber drying kilns inherently limits the throughput of the woodworking equipment.

6.5 *Other Changes*

All permit conditions that required some action to be taken within a specified time from the original permit issuance date were modified. They now contain the actual date that the action was to be completed.

7. INSIGNIFICANT ACTIVITIES

Bennett Lumber's emergency generator is now included as an insignificant activity. The emissions from the emergency generator were estimated based on AP-42 emissions factors for internal combustion engines rated less than 600 horsepower and 500 hours per year of potential operation. The uncontrolled potential emissions are less than 10% of the significant rates for all criteria pollutants. This meets the requirements of IDAPA 58.01.01.317.01.b.30. The appendix contains an emissions estimate for the generator. DEQ determined that the PM emissions limit for fuel burning equipment does not apply to this generator, as it does not meet the definition of fuel burning equipment in IDAPA 58.01.01.006.42.

8. ALTERNATIVE OPERATING SCENARIOS

There are no alternative operating scenarios identified by the facility.

9. TRADING SCENARIOS

No emissions trading scenarios were requested in the permit application.

10. COMPLIANCE SCHEDULE

10.1 Compliance Plan

Bennett Lumber has certified compliance with all applicable requirements. No compliance plan was submitted.

10.2 Compliance Certification

Bennett Lumber is required to periodically certify compliance in accordance with General Provision 21.

11. COMPLIANCE ASSURANCE MONITORING

Compliance assurance monitoring applies to Bennett Lumber's wood-fired boiler in accordance with 40 CFR 64.2 because the potential particulate emissions without consideration of the wet scrubber and multiclone exceed 100 tons per year. Bennett Lumber is required to submit the information required in 40 CFR 64.4 with their application for permit renewal in accordance with 40 CFR 64.5(b).

12. ACID RAIN PERMIT REQUIREMENTS

The Bennett Lumber facility is not subject to the Acid Rain permitting requirements of 40 CFR 72 through 75. The facility is not an affected unit according to the definitions and applicability under 72.2 and 72.6. The Bennett Lumber facility is a non-utility unit (72.6(b)(8)). "Unit" defined as a fossil fuel-burning device and "utility" defined as any person that sells electricity.

13. AIRS DATABASE

AIRS/AFS FACILITY-WIDE CLASSIFICATION DATA ENTRY FORM

PROGRAM / POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	TITLE V	AREA CLASSIFICATION A – Attainment U – Unclassifiable N – Nonattainment
SO_2	B						U
No_x	B						U
CO	A					A	U
PM_{10}	B						U
PT (Particulate)	SM					SM	U
VOC	B						U
THAP (Total HAPs)	NA						
			APPLICABLE SUBPART				

A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For NESHAP only, class "A" is applied to each pollutant which is below the 10 ton-per-year (T/yr) threshold, but which contributes to a plant total in excess of 25 T/yr of all NESHAP pollutants.

SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.

B = Actual and potential emissions below all applicable major source thresholds.

C = Class is unknown.

ND = Major source thresholds are not defined (e.g., radionuclides).

14. REGISTRATION FEES

This facility is a major facility as defined by IDAPA 58.01.01.008.10; therefore, registration and registration fees apply in accordance with IDAPA 58.01.01.387.

15. RECOMMENDATION

Based on the Tier I application and review of state rules and federal regulation, staff recommends that DEQ issue Tier I operating Permit No. T1-020203 to Bennett Lumber. A draft permit was provided for public comment and a proposed permit provided to EPA. No comments were received from the public or EPA.

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APPENDIX

Emergency Generator Emissions Inventory

Criteria Pollutant Emission Inventory

Emissions Calculation for an IC Engine Rated at Less Than 600 hp

Source: Emergency Generator
Permit No.: T2-010208
Source Type: I.C. Engine
Manufacturer John Deere
Model No.: Power Tech 6081AF001
Fuel Diesel

No. of Sources	Maximum Capacity	Daily Hours	Annual Hours	Total Annual Usage	Emission Factors					Emissions									
					CO[c]	NO_x[c]	PM_{10}[c]	SO_2[b,c,d]	VOC[c]	CO		NO_x	PM_{10}			SO_2			VOC
					lb/hp-hr	lb/hp-hr	lb/hp-hr	lb/hp-hr	lb/hp-hr	lb/hr	tpy	tpy	lb/hr	lb/day	tpy	lb/hr	lb/day	tpy	tpy
Long Term Base Case																			
1	250 hp	24	500	125,000 hp-hr	0.00668	0.031	0.00220	0.0036	0.00247	1.67	0.42	1.94	0.55	13.20	0.14	0.90	21.60	0.23	0.15
									Maximum Emissions:	**1.67**	**0.42**	**1.94**	**0.55**	**13.20**	**0.14**	**0.90**	**21.60**	**0.23**	**0.15**

[b] SO_2 factor based on % by weight sulfur in diesel, sulfur content of diesel = 0.5 % by weight
[c] From AP-42, October 1996, Table 3.3-1.
[d] BSFC from AP-42, October 1996, Section 3.3, Page 3.3-6: 7000 Btu/hp-hr
[d] Diesel heating value from AP-42, October 1996, Section 3.3, Page 3.3-6: 19300 Btu/lb